

WHAT IS CLAIMED IS:

1. A secondary backing for a surface covering comprising at least one thermoplastic material and polymeric microspheres dispersed therein.
2. The secondary backing of claim 1, wherein said polymeric microspheres  
5 comprise hollow expandable or pre-expanded microspheres or a combination thereof.
3. The secondary backing of claim 1, wherein said polymeric microspheres are expandable.
4. The secondary backing of claim 1, wherein said polymeric microspheres  
10 are pre-expanded.
5. The secondary backing of claim 1, wherein the secondary backing is cushioned-backed.
6. The secondary backing of claim 1, wherein the secondary backing is hard back.
- 15 7. The secondary backing of claim 1, further comprising at least one plasticizer.
8. The secondary backing of claim 1, wherein at least one thermoplastic material is an aliphatic thermoplastic resin.
9. The secondary backing of claim 8, wherein said aliphatic thermoplastic  
20 resin is derived by polymerization of an ethylenically unsaturated monomer.
10. The secondary backing of claim 9, wherein said monomer is an olefin, a nitrile, vinyl, vinylidene chloride, vinylacetate, acrylate, or

combinations thereof.

11. The secondary backing of claim 1, wherein said at least one thermoplastic material is a vinyl-type material.
12. The secondary backing of claim 7, wherein said at least one plasticizer is a phthalate-based compound.
13. The secondary backing of claim 1, further comprising at least one activated blowing agent.
14. The secondary backing of claim 13, wherein said blowing agent comprises azodicarbonamide, p,p-oxybis(benzenesulfonylhydrazide), p-toluenesulfonylhydrazide, or combinations thereof.
15. The secondary backing of claim 1, wherein said polymeric microspheres are heat resistant to a temperature of at least about 300 F for about 5 to about 10 minutes.
16. The secondary backing of claim 1, wherein said polymeric microspheres withstand pressures of at least about 500 psi without microsphere breakage.
17. The secondary backing of claim 1, wherein said microspheres are present in an amount of from about 5 parts to about 100 parts per 100 parts by weight thermoplastic material.
18. The secondary backing of claim 13, wherein said blowing agent is present in an amount of from about 0.5 to about 5.0 per 100 parts by weight thermoplastic material.
19. The secondary backing of claim 1, wherein said secondary backing has a

thickness of from about 10 mils to about 50 mils after curing.

20. The secondary backing of claim 1, wherein said secondary backing has a thickness of from about 50 mils to about 150 mils after curing.

21. The secondary backing of claim 13, wherein said secondary backing is expanded by about 1 to about 2.5 times.

22. The secondary backing of claim 13, wherein said secondary backing is expanded by about 1.5 to about 2.0 times.

23. A textile substrate comprising a primary backing with textile fibers extending upwardly from the backing and forming a surface:  
and a secondary backing affixed to the bottom surface of the primary backing wherein said secondary backing comprises at least one thermoplastic material having polymeric microspheres dispersed therein.

24. The textile substrate of claim 23, wherein said textile substrate is a carpet.

25. The textile substrate of claim 23, wherein said textile substrate is a broadloom carpet, modular tile, or wide roll carpet.

26. The textile substrate of claim 23, further comprising at least one adhesive or polymeric pre-coat layer located beneath the primary backing.

27. The textile substrate of claim 26, further comprising at least one intermediate backing layer located beneath the adhesive or polymeric pre-coat layer.

28. The textile substrate of claim 27, further comprising at least one reinforcement material layer or stabilizer layer located beneath said intermediate backing layer.
29. The textile substrate of claim 23, wherein said textile substrate has a  
5 density of from about 20 to about 45 lb/ft<sup>3</sup> density.
30. The textile substrate of claim 23, wherein said textile substrate has a density of from about 20 to about 30 lb/ft<sup>3</sup> density.
31. The textile substrate of claim 23, wherein the secondary backing and the  
10 primary backing are affixed such that there is no delamination under ASTM D-3936.
32. The textile substrate of claim 23, wherein said secondary backing further comprises at least one activated blowing agent.
33. The textile substrate of claim 32, wherein said secondary backing and  
15 primary backing are affixed such that there is no delamination under ASTM D-3936.
34. The textile substrate of claim 32, wherein said blowing agent is present in an amount of from about 0.5 to about 5.0 per 100 parts by weight thermoplastic material.
35. A method of making a textile substrate comprising applying a secondary  
20 backing formulation comprising at least one liquid thermoplastic material and polymeric microspheres onto the back of a substrate comprising a primary backing layer;  
gelling the formulation; and

curing the formulation to form the textile substrate comprising the primary backing layer and secondary backing layer.

- 5 36. The method of claim 35, wherein said substrate further comprises at least one adhesive or polymeric pre-coat layer located beneath the primary backing layer.
37. The method of claim 36, wherein said substrate further comprises at least one intermediate backing layer located beneath the adhesive or polymeric pre-coat layer.
- 10 38. The method of claim 37, further comprising at least one reinforcement material layer or stabilizer layer located beneath the intermediate backing layer.
39. The method of claim 37, wherein said secondary backing layer is affixed to the intermediate backing layer.
- 15 40. The method of claim 38, wherein said secondary backing layer is affixed to the reinforcement material layer or stabilizer layer.
41. The method of claim 35, wherein from about 2.0 phr to about 20 phr polymeric microspheres are present in said formulation.
42. The method of claim 35, wherein said formulation further comprises at least one blowing agent which is activated during said method.
- 20 43. The method of claim 42, wherein said blowing agent is present in an amount of from about 0.5 phr to about 5.0 phr.
44. The method of claim 35, wherein said polymeric microspheres are non-expandable.

45. The method of claim 35, wherein said polymeric microspheres are expandable.
46. The method of claim 35, wherein said polymeric microspheres are pre-expanded.
- 5 47. The method of claim 42, wherein said secondary backing is expanded by about 1 to about 2.5 times.
48. The method of claim 42, wherein said secondary backing is expanded by about 1.5 to about 2 times.
49. A surface covering comprising a support surface and overlying and  
10 adhered to said support surface is a first layer comprising at least one thermoplastic material and polymeric microspheres dispersed therein.
50. The surface covering of claim 49, further comprising a wear surface adhered to said first layer wherein said wear surface comprises at least one underlying wear layer base coat and at least one overlying wear  
15 layer top coat adhered to said wear layer base coat.
51. The surface covering of claim 49, wherein said first layer further comprises at least one activated blowing agent.
52. The surface covering of claim 49, wherein said first layer is printed with a design layer.
- 20 53. The surface covering of claim 49, wherein said surface covering is a floor covering.
54. The surface covering of claim 49, wherein said thermoplastic material is a vinyl type material.

55. The surface covering of claim 49, wherein said support surface and first layer are adhered such that there is no delamination under ASTM D-3936.

56. The surface covering of claim 51, wherein said first layer is expanded by about 1 to about 2.5 times.

57. The surface covering of claim 51, wherein said first layer is expanded by about 1.5 to about 2.0 times.

58. A surface covering comprising a primary backing and overlying and adhered to said primary backing is a secondary backing comprising at least one thermoplastic material and at least one activated blowing agent, wherein said secondary backing casted on said primary backing.

59. The surface covering of claim 58, wherein said secondary backing is expanded by about 1.0 to about 2.5 times.

60. The surface covering of claim 58, wherein said secondary backing and primary backing are affixed such that there is no delamination under ASTM D-3936.

61. The surface covering of claim 58, wherein said primary backing comprises a textile substrate.

62. A method of making a surface covering comprising applying a secondary backing formulation comprising at least one liquid thermoplastic material, at least one blowing agent, and at least one activator onto the back of a substrate comprising a primary backing layer;

gelling the formulation and activating the blowing agent; and  
curing the formulation to form the surface covering comprising the  
primary backing layer and the secondary backing layer, such that the  
secondary backing is expanded by about 1 to about 2.5 times.

5 63 A surface covering comprising a primary backing;  
at least one adhesive or polymeric precoat layer located and affixed to  
the primary backing;  
optionally at least one intermediate backing layer located beneath and  
affixed to the adhesive or polymeric pre-coat layer;  
10 optionally at least one reinforcement material layer or stabilizer layer  
located and affixed beneath the adhesive or polymeric pre-coat layer or  
intermediate backing layer;  
and a secondary backing comprising at least one thermoplastic material  
located and affixed to either the adhesive or polymeric pre-coat layer or  
15 one of the optional layers; and  
wherein polymeric microspheres are dispersed in at least one of the  
layers except the primary backing.

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